

Handbook of Mathematics and Computational Science. By John W. Harris and Horst Stocker. Springer-Verlag, New York. (1998). 1028 pages. \$29.95, DM 40.00, öS 292.00, sFr 37.00, GBP 19.50.

Contents:

Introduction. 1. Numerical computation (arithmetics and numerics). 2. Equations and inequalities (algebra). 3. Geometry and trigonometry in the plane. 4. Solid geometry. 5. Functions. 6. Vector analysis. 7. Coordinate systems. 8. Analytic geometry. 9. Matrices, determinants, and systems of linear equations. 10. Boolean algebra-application in switching algebra. 11. Graphs and algorithms. 12. Differential calculus. 13. Differential geometry. 14. Infinite series. 15. Integral calculus. 16. Vector analysis. 17. Complex variables and functions. 18. Differential equations. 19. Fourier transformation. 20. Laplace and z transformations. 21. Probability theory and mathematical statistics. 22. Fuzzy logic. 23. Neural networks. 24. Computers. 25. Tables of integrals. Index.

BeTM: Advanced Topics. By the Be Development Team. O'Reilly, Sebastopol, CA. (1998). 365 pages. \$39.95 (CD-ROM included).

Contents:

Preface. 1. Introduction. 2. The network kit. 3. The mail kit. 4. The translation kit. 5. The media kit. 6. The Midi kit. 7. The game kit. 8. The OpenGL kit. 9. The device kit. 10. Playing with Tracker. 11. Graphics card drivers. 12. Device drivers. 13. Network add-ons.

Graphical Models for Machine Learning and Digital Communication. By Brendan J. Frey. MIT Press, Cambridge, MA. (1998). 195 pages. \$32.00.

Contents:

Series foreword. Preface. 1. Introduction. 2. Probabilistic inference in graphical models. 3. Pattern classification. 4. Unsupervised learning. 5. Data compression. 6. Channel coding. 7. Future research directions. References. Index.

Generalized Quasilinearization for Nonlinear Problems. By V. Lakshmikantham and A. S. Vatsala. Kluwer Academic Publishers, Dordrecht. (1998). 276 pages. \$140.00, NLG 260.00, GBP 89.00.

Contents:

Preface. 1. First order differential equations. 2. First order differential equations (cont.). 3. Second order differential equations. 4. Miscellaneous extensions. References. Index.

Partial Differential Equations and Boundary Value Problems. By Viorel Barbu. Kluwer Academic Publishers, Dordrecht. (1998). 277 pages. \$129.00, NLG 240.00, GBP 82.00.

Contents:

Notations. Preface. 1. Preliminaries. 2. Elliptic boundary value problems. 3. Elliptic problems in Sobolev spaces. 4. The heat equation. 5. The wave equation. Index.

Discrete and Fractional Programming Techniques for Location Models. By Ana Isabel Barros. Kluwer Academic Publishers, Dordrecht. (1998). 178 pages. \$97.00, NLG 180.00, GBP 62.00.

Contents:

1. Introduction. 2. Discrete location models. 3. Location models and fractional programming. 4. Generalized fractional programming. 5. Summary and remarks. Bibliography. Index.

Applications of Point Set Theory in Real Analysis. By A. B. Kharazishvili. Kluwer Academic Publishers, Dordrecht. (1998). 236 pages. \$105.00, NLG 195.00, GBP 66.00.

Contents:

Preface. 0. Introduction: Preliminary facts. 1. Set-valued mappings. 2. Nonmeasurable sets and sets without the Baire property. 3. Three aspects of the measure extension problem. 4. Some properties of σ -algebras and σ -ideals. 5. Nonmeasurable subgroups of the real line. 6. Additive properties of invariant σ -ideals on the real line. 7. Translations of sets and functions. 8. The Steinhaus property of invariant measures. 9. Some applications of the property (N) of Luzin. 10. The principle of condensation of singularities. 11. The uniqueness of Lebesgue and Borel measures. 12. Some subsets of spaces equipped with transformation groups. 13. Sierpiński's partition and its applications. 14. Selectors associated with subgroups of the real line. 15. Set theory and ordinary differential equations. Bibliography. Subject index.

The New Renaissance: Computers and the Next Level of Civilization. By Douglas S. Robertson. Oxford University Press, New York. (1998). 200 pages. \$25.00.

Contents:

Introduction. 1. The information revolution. 2. "Theories of everything" and the new Copernican revolution. 3. The computer revolution in science and mathematics. 4. Uncomputable numbers. 5. The computer revolution in education. 6. Language in the computer age. 7. Decimal delenda est. 8. The computer revolution in the arts. 9. The impact of computers on everyday life. 10. On growth. Conclusion. References. Index.